

## AMENDMENTS

### In the Claims

Claims 1, 9, 19, 24 and 26 are amended.

Claims 1-29 remain in the application and are listed below:

1. (Currently amended) A method of forming a semiconductor device comprising:

forming at least one conductive structure within a plurality of semiconductor substrates, said act of forming comprising first forming said at least one conductive structure to extend into a respective semiconductor substrate a distance that is less than an elevational thickness of the substrate, and second removing substrate material elevationally adjacent said one conductive structure effective to expose a surface of said one conductive structure, at least portions of one of the conductive structures having oppositely facing, exposed outer surfaces, both exposed outer surfaces being disposed elevationally inwardly of substrate surfaces that define the elevational thickness; and

stacking individual substrates together such that individual conductive structures on each substrate are in electrical contact with the conductive structures on a next adjacent substrate.

2. (Original) The method of claim 1, wherein said stacking of the substrates comprises stacking singulated semiconductor die.

3. (Original) The method of claim 1, wherein said at least one conductive structure comprises aluminum.

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2 4. (Original) The method of claim 1, wherein said at least one  
3 conductive structure comprises multi-layered pad structures.  
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5 5. (Original) The method of claim 1, wherein said at least one  
6 conductive structure is not disposed at the periphery of the substrates.  
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8 6. (Original) The method of claim 1, wherein said stacking of the  
9 substrates comprises stacking singulated die, and wherein said at least one  
10 conductive structure is disposed within the center of the die.  
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12 7. (Original) The method of claim 1, wherein the substrates support  
13 memory devices.  
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15 8. (Original) The method of claim 1, wherein the substrates support  
16 DRAM devices.  
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18 9. (Currently Amended) A method of forming a semiconductor device  
19 comprising:

20 forming at least one conductive structure within each of a plurality of  
21 semiconductor substrates, each substrate having an elevational thickness between  
22 two outwardly-facing substrate surfaces, said at least one conductive structure  
23 comprising a multi-layered structure formed through successive depositions and  
24 etchings and having oppositely-facing surfaces, both oppositely-facing surfaces  
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1 being disposed elevationally inwardly of said two outwardly-facing substrate  
2 surfaces;

3 exposing portions of each oppositely-facing surface on at least one of the  
4 substrates; and

5 processing the substrates sufficient to form electrical connections between  
6 the substrates, said processing comprising stacking the substrates on one another  
7 so that the conductive structures on adjacent substrates are electrically connected.

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9 10. (Original) The method of claim 9, wherein said exposing comprises  
10 removing portions of said at least one substrate to expose at least one of the  
11 oppositely-facing surfaces.

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13 11. (Original) The method of claim 9, wherein said exposing comprises  
14 etching portions of said at least one substrate to expose at least one of the  
15 oppositely-facing surfaces.

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17 12. (Original) The method of claim 9, wherein said exposing comprises  
18 selectively etching portions of said at least one substrate relative to material from  
19 which the conductive structure is formed to expose at least one of the oppositely-  
20 facing surfaces.

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22 13. (Original) The method of claim 9, wherein said processing  
23 comprises forming additional conductive material over and in electrical contact  
24 with said exposed portions.

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1           14. (Original) The method of claim 13, wherein said forming of the  
2 additional conductive material comprises plating conductive material over and in  
3 electrical contact with said exposed portions.

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5           15. (Original) The method of claim 13, wherein said forming of the  
6 additional conductive material comprises plating more than one conductive  
7 material over and in electrical contact with said exposed portions.

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9           16. (Original) The method of claim 13, wherein said conductive  
10 structures comprise aluminum, and said forming of the additional conductive  
11 material comprises plating material comprising nickel over and in electrical  
12 contact with said exposed portions.

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14           17. (Original) The method of claim 16, wherein said forming of the  
15 additional conductive material comprises plating at least one other conductive  
16 material over the material comprising nickel.

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18           18. (Original) The method of claim 16, wherein said forming of the  
19 additional conductive material comprises plating at least one other conductive  
20 material comprising gold over the material comprising nickel.

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22           19. (Currently Amended) A method of forming a semiconductor device  
23 comprising:

24           forming at least one conductive structure within each of a plurality of  
25 semiconductor substrates, each semiconductor substrate having an elevational

1 thickness between two outwardly-facing substrate surfaces, each conductive  
2 structure having oppositely-facing surfaces, both oppositely-facing surfaces being  
3 disposed elevationally inwardly of said two outwardly-facing substrate surfaces;

4 after said forming, exposing portions of at least one oppositely-facing  
5 surface on at least one of the substrates, said exposing comprising etching portions  
6 of said at least one substrate to expose said at least one surface; and

7 processing the substrates sufficient to form electrical connections between  
8 the substrates by stacking the substrates on one another so that electrical  
9 connection can be made between conductive structures on adjacent substrates, said  
10 processing comprising:

11 forming additional conductive material over and in electrical contact  
12 with said exposed portions; and

13 bonding at least some of the additional conductive material on one  
14 substrate with additional conductive material on another of the substrates.

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16 20. (Original) The method of claim 19, wherein the forming of the  
17 additional conductive material comprises plating the additional conductive  
18 material over said exposed portions.

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20 21. (Original) The method of claim 19, wherein the forming of the  
21 additional conductive material comprises plating more than one additional  
22 conductive material over said exposed portions.

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24 22. (Original) The method of claim 19, wherein said semiconductor  
25 substrates support memory devices.

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2 23. (Original) The method of claim 19, wherein said semiconductor  
3 substrates support DRAM devices.

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5 24. (Currently Amended) A method of forming a semiconductor device  
6 comprising:

7 forming at least one multi-layered, conductive pad structure within each of  
8 a plurality of semiconductor substrates, each semiconductor substrate having an  
9 elevational thickness between two outwardly-facing substrate surfaces, each  
10 conductive pad structure having oppositely-facing surfaces, both oppositely-facing  
11 surfaces being disposed elevationally inwardly of said two outwardly-facing  
12 substrate surfaces;

13 exposing portions of each oppositely-facing surface on at least one of the  
14 substrates, at least one oppositely-facing surface being exposed by etching  
15 portions of said at least one substrate to expose said at least one surface; and

16 after said exposing, forming additional conductive material over and in  
17 electrical contact with said exposed portions by plating more than one additional  
18 conductive material over said exposed portions.

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20 25. (Original) The method of claim 24 further comprising after said  
21 forming of the additional conductive material, stacking the substrates on one  
22 another and bonding at least some of the additional conductive material on one  
23 substrate with additional conductive material on another of the substrates.

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25 26. (Currently Amended) A method comprising:

1 a step for providing a multi-layered structure within each of a plurality of  
2 substrates, each substrate having an elevational thickness between two outwardly-  
3 facing substrate surfaces, the multi-layered structures having a front side and a  
4 back side, each front side and back side being disposed elevationally inwardly of  
5 said two respective outwardly-facing substrate surfaces;

6 a step for thinning at least one of the substrates after providing the multi-  
7 layered structure;

8 a step for exposing portions of the back side of a multi-layered structure of  
9 said at least one substrate that was thinned;

10 a step for forming additional conductive material over and in electrical  
11 contact with the multi-layered structure of the substrate that was thinned; and

12 a step for stacking the substrates such that the multi-layered structures with  
13 the substrates are in electrical contact with one another.

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15 27. (Original) The method of claim 26, wherein the step for thinning  
16 comprises mechanically abrading said at least one substrate.

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18 28. (Original) The method of claim 26, wherein the step for exposing  
19 portions of the back side of the multi-layered structure of said at least one  
20 substrate comprises selectively etching substrate material relative to material from  
21 which the multi-layered structure is formed.

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23 29. (Original) The method of claim 26, wherein the step for forming  
24 additional conductive material comprises forming a first conductive material over  
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1 the multi-layered structure and then forming a second different material over the  
2 fist conductive material.

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